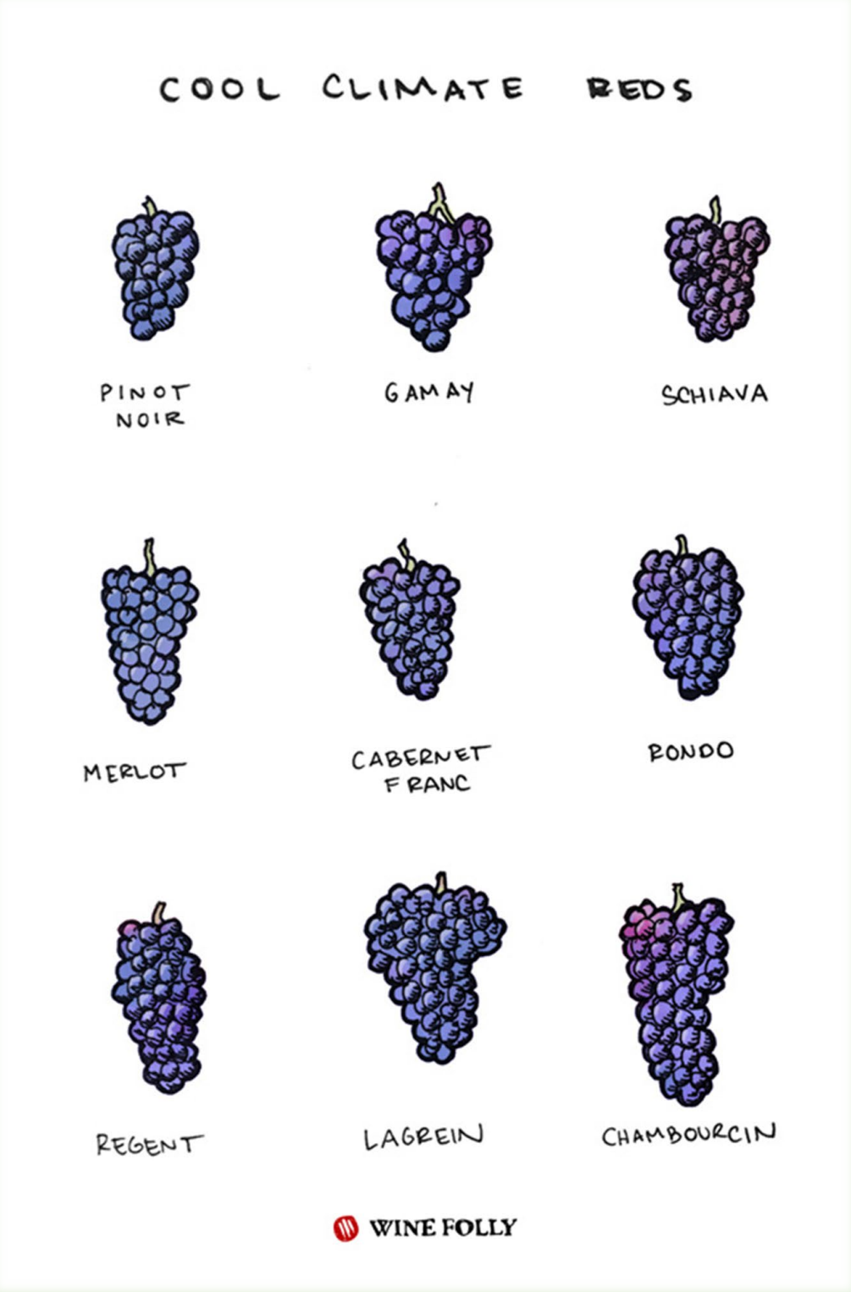
Defining 'Cool Climate' Research: A Bibliographic Analysis

Ian D. Gordon[1], Betty Galbraith[2], Chris Savino[3]

[1] James A. Gibson Library, Brock University, St. Catharines, ON, L2S 3A1, Canada.

[2] Owen Science Library, WSU Libraries, Washington State University, Pullman WA, 99164-5610, United States.

[3] College of Agriculture and Life Sciences, Cornell University, Ithaca NY, 14853, United States.



Introduction

What counts as "cool climate" research continues to be open for debate by oenologist, viticulturalists, researchers, scholars, practitioners and wine lovers (Gardner 2016, Mowery 2016, Puckette 2018). Conducting a bibliographic analysis of cool climate scholarly papers and their journals, this study helps to provide data and more clarity as to what constitutes "cool climate" wine research. Bibliometric studies provide a critical quantitative evaluation of publishing, subject, and scholarly impact. This bibliometric study of "cool climate" wine scholarly papers and their journals is truly unique in its analysis and findings.

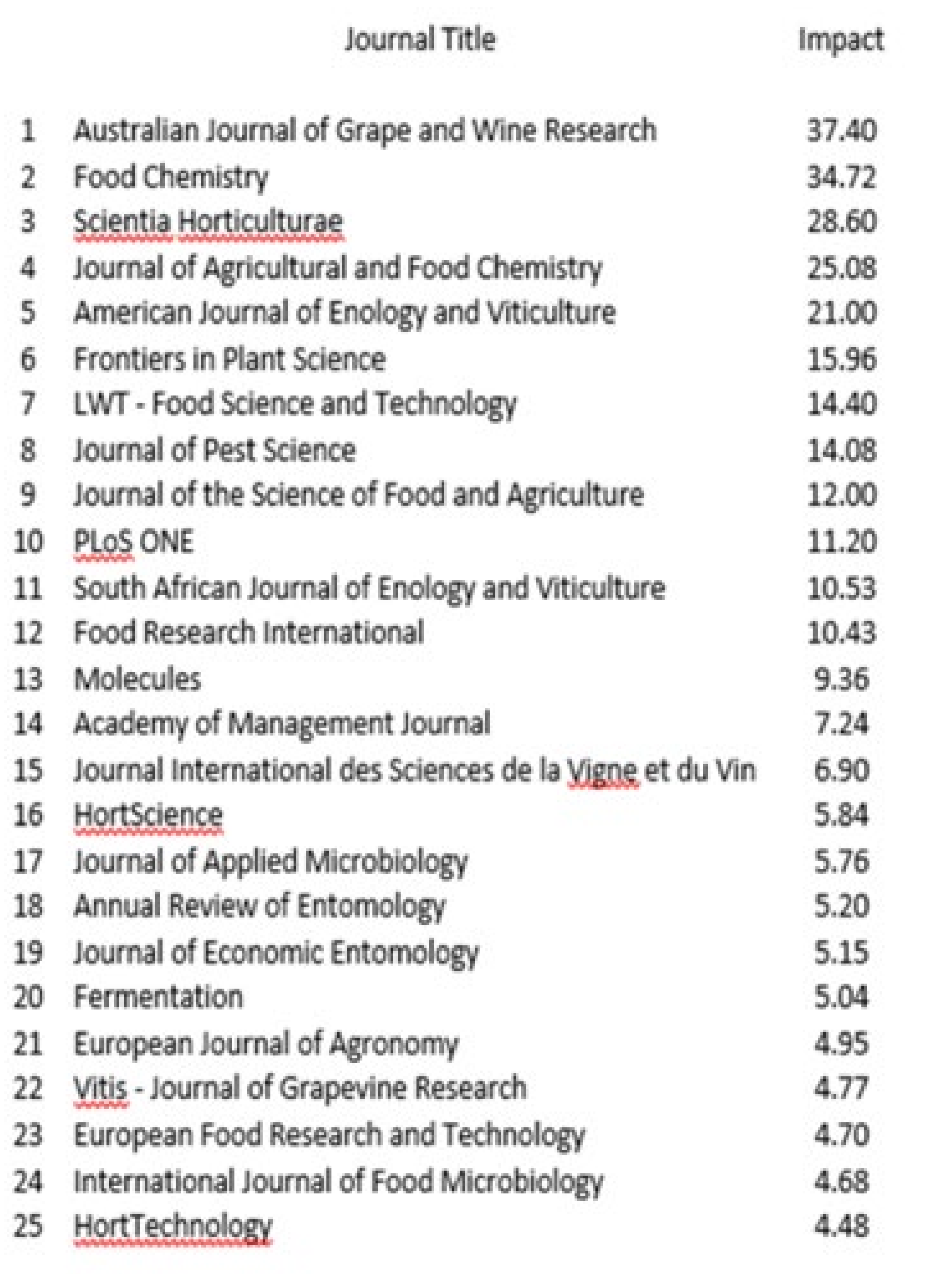
Gardner, Denise. 'What is Enology?' (2016) Penn State Extension Wine & Grapes U.,
Puckette, Madeline. 'Wine Term: Cool Climate.' (2018) Wine Folly.
Mowery, Lauren. (2018). The Real Difference Between Cool-Climate and Warm-Climate Wine. WineEnthusiast

Methodology

Three datasets were created using: 1) Clarivate Web of Science Complete and Elsevier Scopus database bibliographic search strategies [("cool climate" and wine*) AND (grape* or enolog* or oenolog* or viticulture or vitis*) AND PY=2014-2018], 2) Clarivate InCites and Elsevier SciVal database benchmarking topic clusters and research categories e.g. TC.544, and 3) published papers by researchers at or connected with Brock's CCOVI Institute, Cornell and WSUs' Viticulture and Enology programs from 2014 to 2018. Data visualizations, benchmarking and statistical analysis were not limited to but included metrics from Journal Citation Reports (JCR), Altmetric Explorer, Scimago SJR, InCites, SciVal, Google Scholar, Harzing.com Publish or Perish, Bibliometrix R Package, CWTS Journal Indicators and additional alternate databases.

Findings

- Included 562 aggregated papers from 232 journals by **Brock (17.6%), Cornell (50.5%), and WSU (33.5%)** researchers
- Analyzed **7012 "cool climate" papers** in total, from **1127 journals**
- **Top 25 cool climate journals and their impact values**, see Table 1
- Cool climate research **is expanding exponentially**, 19.63 average citations per item, 30 h-index, see Table 2
- A significant **majority (79.9%) of "cool climate" papers** came from a **minority (21.2%) of academic journals**
- **Cool climate research is respectable**, 5-year aggregated mean cool climate **journal impact factor (2.681)** is respectable wrt Horticulture (1.597), Food Science & Technology (2.851), Biology (3.181), Ecology (3.385), Plant Sciences (4.414)…
- Top 50 (of 96) **cool climate subject clusters**, Food Science (9.6%), Agronomy (8.3%), Plant Science (7.1%), Horticulture (4.9%), Insect Science (3.4), and Ecology (2.9%), see Figure 1
- **Top cool climate indexing and abstracting databases**: Scopus (88.4%), Web of Science (85.9%), BIOSIS (70.3%), Vitis (51.2%), SciFinder-n (49.8), AGRIS (46.3%), MEDLINE (44.5%), FSTA (36.3%), AGRICOLA (35.8%)…
- Top cool climate researches **co/published on average 3.21 papers per year**, WSU (2.35), Brock (3.96), and Cornell (4.04)
- 2.7% of viticulture and oenology scholarly articles are tagged with **"cool climate" descriptors**
- 24.3% of cool climate papers were published in **open access journals**
- 3.8% of papers involve **non-scientific** research areas.



	Journal Title	Impact
1	Australian Journal of Grape and Wine Research	37.40
2	Food Chemistry	34.72
3	Scientia Horticulturae	28.60
4	Journal of Agricultural and Food Chemistry	25.08
5	American Journal of Enology and Viticulture	21.00
6	Frontiers in Plant Science	15.96
7	LWT - Food Science and Technology	14.40
8	Journal of Pest Science	14.08
9	Journal of the Science of Food and Agriculture	12.00
10	PLoS ONE	11.20
11	South African Journal of Enology and Viticulture	10.53
12	Food Research International	10.43
13	Molecules	9.36
14	Academy of Management Journal	7.24
15	Journal International des Sciences de la Vigne et du Vin	6.90
16	HortScience	5.84
17	Journal of Applied Microbiology	5.76
18	Annual Review of Entomology	5.20
19	Journal of Economic Entomology	5.15
20	Fermentation	5.04
21	European Journal of Agronomy	4.95
22	Vitis - Journal of Grapevine Research	4.77
23	European Food Research and Technology	4.70
24	International Journal of Food Microbiology	4.68
25	HortTechnology	4.48

Table 1. Cool Climate Journals

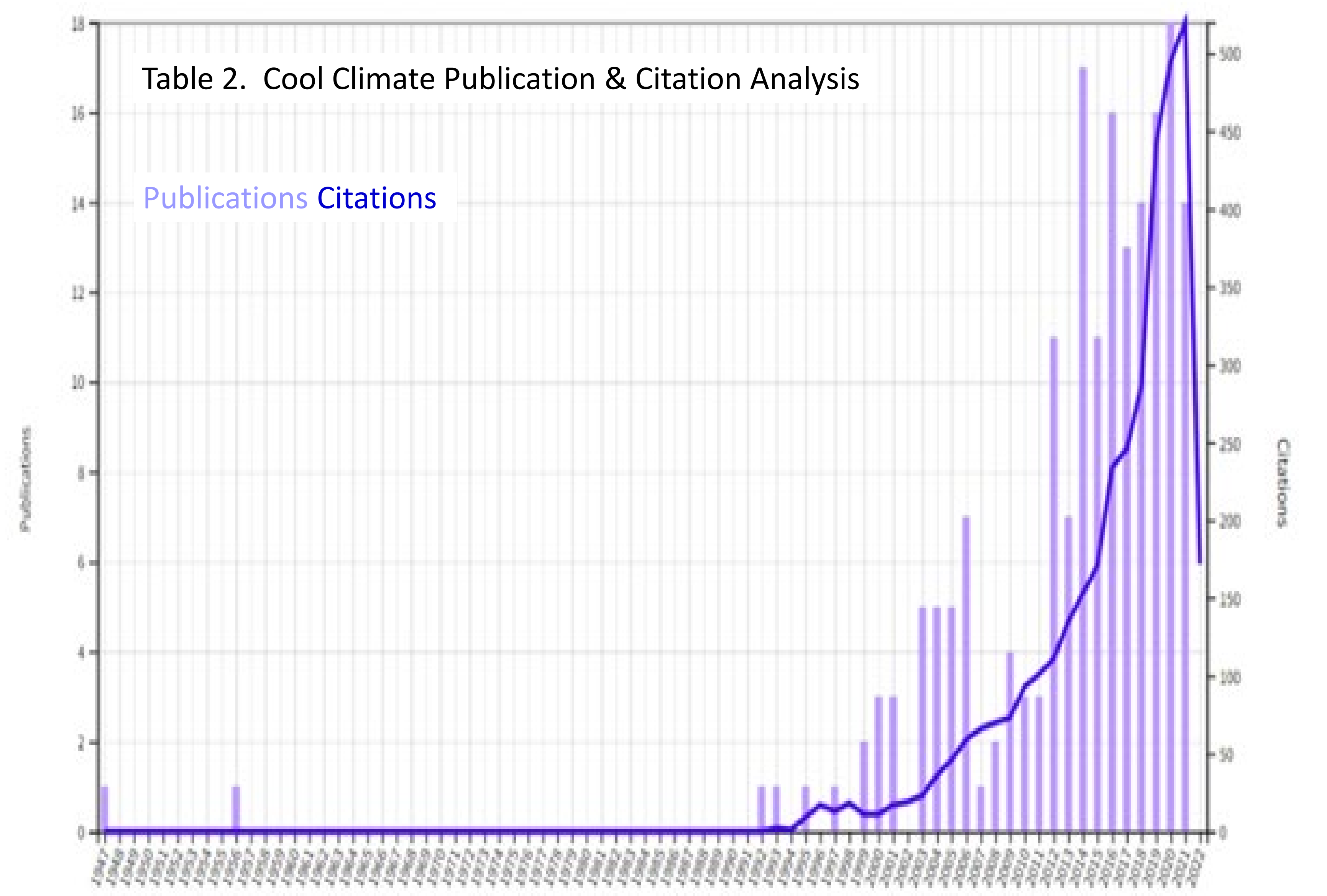


Table 2. Cool Climate Publication & Citation Analysis

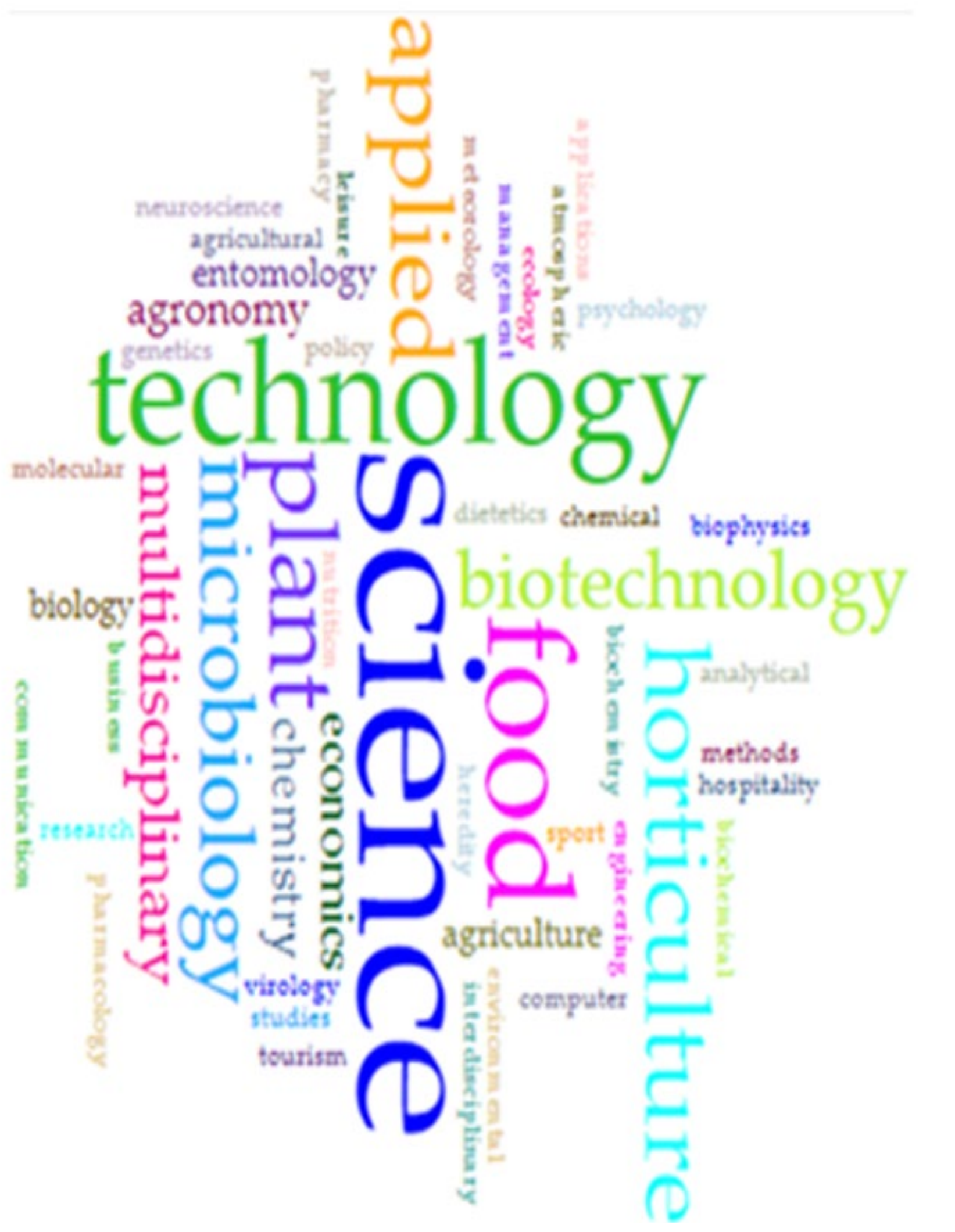


Figure 1. Cool Climate Subject Clusters

Cool climate wine research is interdisciplinary, international, prospering, and an important scientific discipline. Bibliometrics can help quantify research impact and outcomes. Academic librarians can support researchers with evidence synthesis, bibliometrics, graphics, visual presentations of data and assist with telling great stories.